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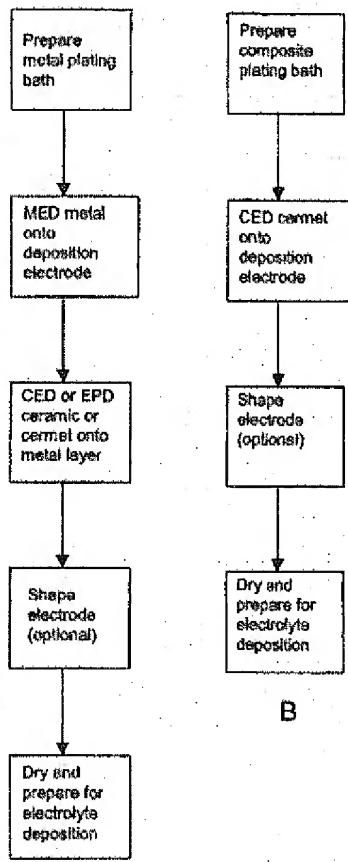
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(54) Title: HOLLOW INORGANIC MEMBRANES PRODUCED BY METAL OR COMPOSITE ELECTRODEPOSITION



(57) Abstract: This invention relates to a method of producing a hollow inorganic membrane that is particularly suitable for solid oxide fuel cell applications, as well as producing hollow inorganic composite laminated membranes having at least one such hollow inorganic membrane. The method comprises electrodepositing an inorganic material that includes at least some electrically conductive metal and some ionically conductive ceramic onto an electrically conductive combustible core, drying the core bearing the deposited inorganic material, then, sintering the core bearing the deposited inorganic material such that the core combusts, thereby producing a hollow inorganic membrane. The method may further comprises electrophoretically depositing a ceramic composition onto the hollow inorganic membrane, to produce an assembly of hollow inorganic composite laminated membranes.



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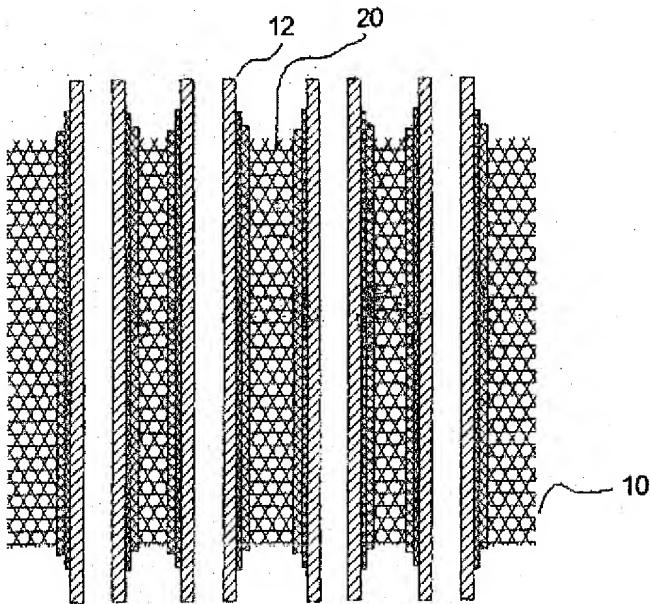
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(54) Title: TUBULAR SOLID OXIDE FUEL CELL STACK



(57) Abstract: This invention relates to a stack comprising a continuous solid-phase matrix and tubular fuel cells embedded in the matrix. Each fuel cell comprises an inner electrode layer, an outer electrode layer, and an electrolyte layer sandwiched between the inner and outer electrode layers. The matrix is sufficiently porous to allow a first reactant to flow through the matrix and to the outer electrode of each fuel cell, and have sufficient mechanical strength to support the fuel cells in the stack. The fuel cells are embedded such that a second reactant may be flowed through the inside of each tubular fuel cell and to the inner electrode thereof. Alternatively, a stack of tubular separation membranes or a stack of tubular membrane reactors may be embedded in the matrix. The

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